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A functional explanation of the "School Fire Prevention Inspection Form" is provided for use by local school and fire department personnel in the Virginia School Fire Prevention Inspection Program. Many helpful suggestions are made for safeguarding occupants of public school buildings from fire hazards. Items discussed are--(1) exit doors, (2) flammable curtains, (3) waste cans, (4) electrical circuits, and (5) fire extinguishers. The appendix contains a copy of the "School Fire Prevention Inspection Form" and a bibliography of fire safety publications. (NI)

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FIRE INSPECTION GUIDE FOR SCHOOLS

BULLETIN

EF002031

Commonwealth of Virginia

State Department of Education

and

State Corporation Commission

January, 1960

State Department of Education
and
State Fire Marshal Division,
Bureau of Insurance,
State Corporation Commission

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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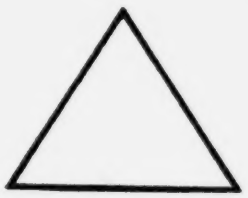
BULLETIN

FIRE INSPECTION GUIDE FOR SCHOOLS



Commonwealth of Virginia
January, 1960

Foreword

This guide has been cooperatively prepared by the State Department of Education and the State Fire Marshal Division, Bureau of Insurance, State Corporation Commission, with the advice and counsel of school and fire department authorities both at the State and local levels. It is basically intended to provide a functional explanation of the *School Fire Prevention Inspection Form* (see Appendix B) distributed by the State Department of Education and the Office of the State Fire Marshal for use by local school and fire department personnel in the Virginia School Fire Prevention Inspection program.

The guide contains many suggestions which should prove helpful to those having a responsibility for safeguarding the occupants of all school buildings against fire hazards. It is hoped that the content may serve as a basis for workshops or discussions on school fire safety in which all those having a function to perform in the prevention of school fires may be involved.

Although the information contained in this guide is brief, an abundance of helpful material on school fire safety may be obtained from the sources indicated in the bibliography. To the end that the lives of all who live and learn within the school buildings of Virginia may be afforded the fullest possible protection against the ravages of fire, this publication is respectfully submitted.

DAVIS Y. PASCHALL
Superintendent of Public Instruction

C. S. MULLEN, JR.
Chief Fire Marshal

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The Virginia School Fire Prevention Inspection Program

The Virginia School Fire Prevention Inspection Program is intended to be a voluntary endeavor involving local school authorities and, where possible, local fire department personnel. Its basic purpose is to encourage school authorities, with the aid of local firemen, to improve school fire safety practices including fire exit drills, and to obtain corrective measures when deficiencies are revealed through the cooperative inspection.

Cooperative inspections are already being made in some localities and it should be understood that the State program, herein described, is not meant to replace, or otherwise change any practices now found to be satisfactory. By the same token, it is recognized that the State Fire Prevention Inspection Form may, of necessity, require some adaptation to local conditions. The important thing is that all schools undergo a periodic inspection and that everything within reason be done to improve fire safety conditions.

The responsibility for initiating fire inspection programs rests with the division superintendent. Where such programs are not a reality, local fire department personnel may wish to offer their services to the superintendent of schools. In planning for the inspection, it is suggested that the division superintendent, or his appointed representative, confer with the head of the local fire department where such is available or convenient, and set a time for the inspection. Prior to the actual inspection, all members of the inspecting team should study and fully understand the content of this guide.

In the light of reactions received from division superintendents and local fire department officials, it is recommended that not less than two (2) inspections be conducted during a given school year—one each semester. When conducting the inspection, it is suggested that for school use, not less than two (2) copies of the inspection form be completed for each school plant. One copy should be retained by the principal of the school inspected, and one copy filed in the office of the division superintendent. In most instances, local fire departments will wish to retain a copy of the completed form.

It should be noted that the inspection form has been developed so that affirmative answers to the questions thereon indicate a desired response, whereas, negative answers indicate conditions need-

ing attention. On the inspection form, on the line marked for signature of "school representative," any school person designated by the superintendent to represent him during the inspection may sign the form. A school representative conceivably could be: an assistant superintendent or other member of the central office administrative staff, a principal, a supervisor of school buildings or other person.

As the inspecting team goes about its task, it should be understood that the inspection program was formulated chiefly with the view toward preventing or eliminating fire hazards often created because of improper administrative, maintenance and housekeeping practices.

Explanation Of Questions On Fire Inspection Form

1. (a) Are the Main Exit Doors from Schools of over 4 Classrooms, including Doors to Fire Escapes, Equipped with Locks or Latches Which are Operated by Panic Bars?

(b) Are These Devices in Good Working Condition?

The "main exit doors" are the exit doors from the main corridors or from Places of Assembly having 200 or more persons such as Auditoriums and Cafeterias. It is not necessary that individual classrooms be equipped with panic hardware. Where exit doors from a Place of Assembly open into an interior hall, it is not necessary to have panic hardware *if the doors are not equipped with latches.* In such cases, it is common practice to use push and pull plates for opening and closing the doors, which in turn are held in closed position by ordinary hydraulic door closers.

The only way to determine whether panic hardware is in good condition is to actually test each door. It is not unusual to find that unsafe devices have been added such as hooks, chains, rimlocks, and head and foot bolts of the type that are not operated by the panic hardware.

Exit Devices

Panic Exit Bar

Push Plate

Pull Bar

2. (a) Are Outside Fire Escapes, Where they Exist, Free from Obstructions?

(b) Are They Used During Fire Drills?

Fire escapes should be completely free from wastebaskets, mops or any other materials. Make sure that fire escapes are not blocked at ground level by gates, fences, stored material or parked motor vehicles.

Fire escapes should be used during exit drills so that teachers and children will become used to them and learn to have confidence in them. If the fire escapes are not safe for exit drills, they would certainly not be safe for use in emergencies, and should not be given any credit as exits.

3. (a) Are There at Least Two Exits from Each Floor of Multistory Buildings?

(b) Are They in Good Repair?

Exits from the upper stories can include both interior stairways and fire escapes. Make sure the exits are in good condition, that handrails and treads are not missing or broken, and that the exits are readily accessible. Stairs over 40 inches wide should have a handrail on each side.

Some schools may have enclosed exit stairs. Make sure the fire doors protecting these enclosures are in good condition and that the door closers are in proper working order. If the door closer is designed to close by operation of a fusible link, be sure that the fusible link is actually in place.

Fusible Link Automatic Door Closers

Sliding Door

Fusible Link

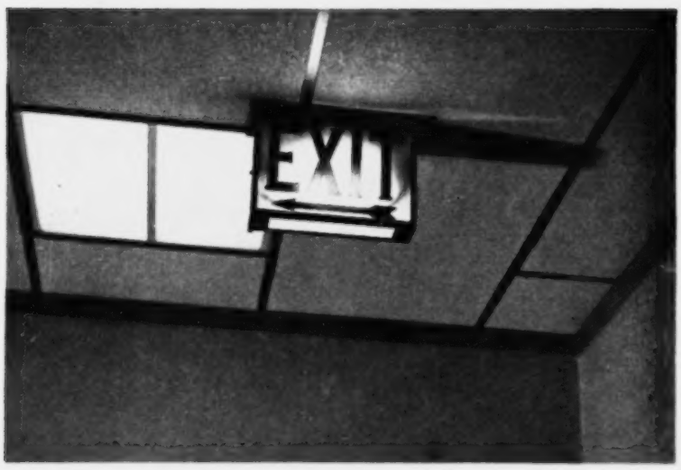
Swinging Door

4. Are Main Exits in Schools of over 4 Classrooms *Marked with Exit Signs?*

Exit signs should be large enough to be clearly visible from all points in public corridors. The smallest permissible externally illuminated exit sign should have letters not less than 6 inches high with the principal strokes not less than ¾ inches wide. Where the sign is internally illuminated, the smallest permissible letters should be not less than 4½ inches high. Larger signs will be needed for long corridors or large Places of Assembly.

Directional signs with arrows should be installed at turns in corridors. Be sure that the exit signs are properly illuminated, either naturally or artificially. It is recommended in most cases that signs be electrically illuminated even during the daytime so that they will be clearly visible in case of emergency, even if a certain amount of smoke gets into the exit corridors.

Exit Directional Sign



5. Do the Exit Doors Open Outward?

Panic has often resulted because exit doors did not swing in the direction of exit travel. The person reaching the door first is often unable to open it because of the rush of people behind him. Give special attention to the exit doors from Places of Assembly, particularly to those doors that open back into an interior corridor.

In some schools, doors may be found across main corridors. One way to assure that such doors swing in the direction of exit travel is the use of a double-acting hinge so that the doors will swing in both directions. Unfortunately, this presents some accident hazard and the best solution, if possible, is to eliminate such doors. Where this is not possible, it is frequently desirable for the doors to be so equipped that they can be left in the fully open position at all times.

Sliding and folding doors are completely unacceptable for use in Places of Assembly or main exits as they cannot swing in either direction.

Generally speaking, the exit doors from any room or space used by more than 50 people should swing in the direction of exit travel. This would mean that for most ordinary classrooms it would be permissible to have the doors opening into the room, since the occupancy is usually less than 50 persons.

6. Are the Corridors Leading to the Exits Clear and Unobstructed?

It is not uncommon to find school corridors obstructed. Corridors should not be used for classroom purposes or for the placement of desks, chairs, display cases and other objects.

Give special attention to the access to fire escapes. Windows are not considered acceptable and should be replaced by doors which may be of the sash type. If the sill is above floor level, steps with suitable railings should be provided up to the door to the fire escape.

7. Are Fire Exit Drills Held at Least Once Each Week During the First Month of School and at Least Once Each Month Thereafter?

(Inspector Should Witness a Drill)

Time Required to Evacuate School_____

School Enrollment_____

This question is based on requirements of State Law as to the frequency of fire drills. The inspectors should witness a fire exit drill if at all possible. (See Appendix C for suggestions on holding such drills in schools.) Give the time it takes to evacuate the school completely and state the number of students participating in the drill (school enrollment).

Virginia School Laws, November, 1958

SECTION 22-156. FIRE PRECAUTIONS—"*In every public school there shall be a fire drill at least once every week during the first month of each school session, and oftener, if necessary, in order that pupils may be thoroughly practiced in such drills. During the remainder of the school session, fire drills shall be held at least monthly.*"

8. Are Provisions for Sounding a Fire Alarm Throughout the School Adequate?

In small schools where only one sending station is needed, mechanical alarm systems are generally considered to be adequate.

In larger schools where more than one sending station is needed, electrical alarm systems are recommended.

The arrangement of sending stations and the manner of their connection with the sounding devices should be such that there will be no difference between an actual alarm and a drill signal. The sounding devices should be such that they can be effectively heard in every room above all other normal school sounds. The system should be so arranged that no manual action is required once the sending station has been actuated. It is recommended that at least one sending station be provided on each floor, so located that it will be within 200 feet of any part of the building. Sending stations should be located near the main exits and in the natural path of escape from fire. It is very important for sending stations to be clearly marked so that they will be easy to find in case of emergency.

Fire Alarm Sending Station

9. Has the Heating Equipment Been Inspected and Approved by a Qualified Person within the Last 12 Months?

Before each heating season, central heating equipment, including smoke pipes, flues and fuel supply arrangements, should be checked by an expert and placed in proper operating condition. It is important that the equipment be operated by a responsible person who has been thoroughly trained.

Even if the inspector is not an expert in heating equipment, it is

advisable to visit the furnace room. The difference between equipment that is being properly maintained and equipment that is not receiving proper maintenance is usually not too hard to spot. In older schools particularly it is well to take a look at the chimneys outside the building to make sure that they are in good condition.

Furnace rooms in modern schools and in many older schools have been enclosed in fire resistive construction. Make sure the fire doors to such rooms are in proper working order.

10. Are Ashes Placed in Metal Containers Used for That Purpose Only?

It may be hard to believe but many cases have been found where ashes from wood or coal-burning furnaces have been deposited in wooden or cardboard containers or placed against combustible partitions. Obviously, the only safe container is of metal. No other refuse should be placed in the containers with the ashes.

Fixed Louver

11. Is the Furnace Room Provided with a Fixed Louver or Other Opening, Permanently Open to the Outdoors, to Supply Combustion Air?

If a furnace does not get sufficient air, the result will be incomplete combustion with loss of efficiency and production of carbon

Exterior View

monoxide. If the furnace room is located in the interior of the building where it is not possible to have a fixed louver opening directly outdoors, it will be necessary to run a duct or tunnel to the outdoors to get necessary fresh air. The size of the louver or duct should be based upon the furnace manufacturer's recommendations or upon the advice of an expert. Doors and windows cannot be depended upon for combustion air since they are subject to being closed during bad weather.

12. Are the Following Locations Free from any Unnecessary Accumulations of Waste Paper, Rubbish, Old Furniture, Stage Scenery and Other Combustible Materials?

Attic_____ Basement_____ Furnace room_____

Stage_____ Under Stage_____ Storage rooms_____

Other locations (specify)_____

The problem of safely handling ashes, rubbish and other refuse is primarily a matter of proper temporary storage and frequent periodic removal from the premises or other safe disposition.

Inspectors should determine the routine for rubbish disposal. Find out who is responsible and see that suggestions reach the person who will do something about them. Often a word to the right person is more important than noting a hazard in a report. Also, a word of appreciation for cleanliness indicates that it is noticed and encourages continuance of the effort involved. Painting of dim or dirty areas is often an effective technique. Clean windows make rubbish and disorders conspicuous and encourage cleanliness.

An ample number of suitable receptacles should be provided. Storage of combustible material in congested out of the way places should be discouraged. Inspectors may find old and unused furniture and equipment, newspapers, magazines, old records, old clothing and other combustible material in basements and attics.

Outdoor housekeeping is often as important as housekeeping inside the buildings. Items to be checked are:

(a) a suitable routine should be established for the regular removal of rubbish and other unnecessary combustible material from the yard and outside storage areas.

(b) grass and weeds in yards should be kept cut.

(c) places should be designated where rubbish may temporarily be placed prior to being burned or moved to a dump. These places should be well away from the buildings.

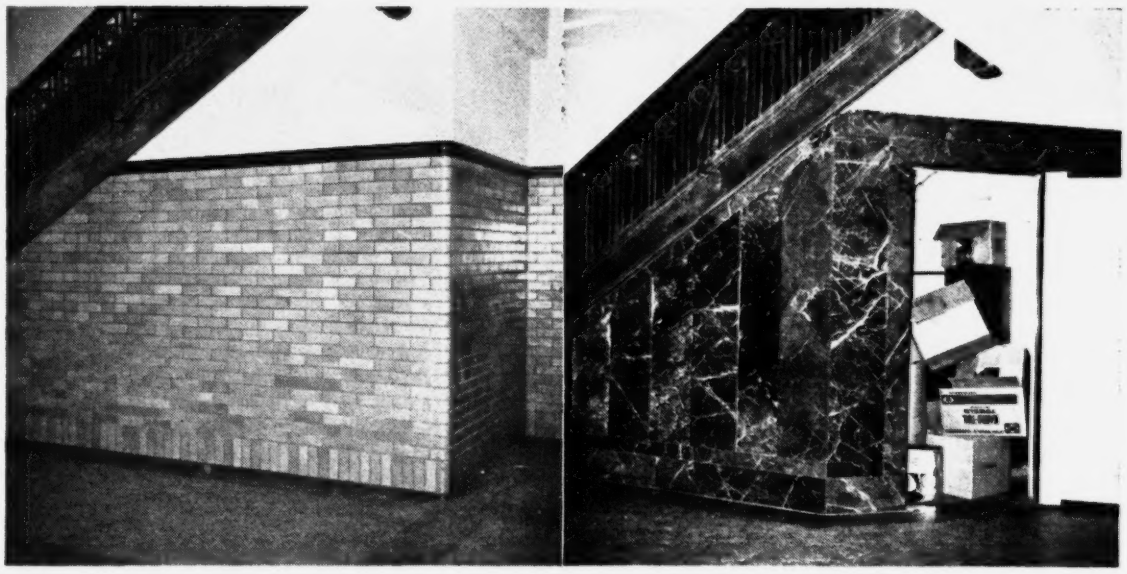
Rubbish should be burned only at designated places and times and under proper supervision. The location for rubbish burning should be sufficiently remote from the buildings and any outside storage so that there is no danger from flying sparks. Specially built incinerators are recommended where there is any appreciable amount of rubbish burning. Such incinerators should be provided with spark arrestor screens.

13. Is the Space Beneath Stairs Free from Any Storage?

Many disastrous school fires have started in materials stored at the bottom of stairs. This situation is particularly dangerous where the stairs go all the way to the basement. Even storage in closets at the foot of stairs is not considered a safe practice.

Existing storage closets located at the bottom of stairs should be cleaned out and made unusable. This can be accomplished by nailing, locking or otherwise fastening the door to the closet so that it cannot be opened, or by enclosing the space.

Right *Wrong*



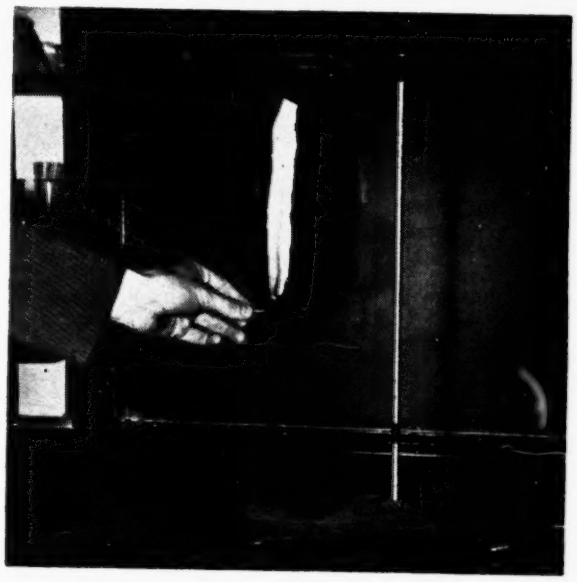
14. Are Decorations, Curtains and Scenery in the Auditorium, Cafeteria or Other Places of Assembly Flameproof?

Most untreated decorations, scenery and curtains of ordinary cloth or paper present a life hazard in Places of Assembly due to the possibility of a flash fire. They are required by the State Fire Safety Regulations to be rendered flameproof. Where possible it is suggested that a field test in accordance with Section 8-1 of National Fire Protection Association Standard No. 701 be conducted.

In conducting this test, a small sample of the material is taken to a location where the test may be conducted safely. The sample is held in a position favorable to burning and tested by application of a flame from a common paper match held in a horizontal position a half inch under the sample for a minimum of 15 seconds. Observations are made to determine that the textile or paper sample does not ignite and spread flame over its surface.

Where it is impossible to secure a sample of the material for testing, some evidence should be obtained showing that the material in question has been properly treated.

Flamespread Test



The National Fire Protection Association has published a number of formulas suitable for flameproofing fabrics. These are available

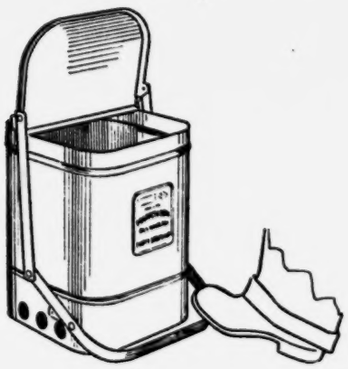
without charge from the State Fire Marshal's Office. Certain of the chemical companies also have preparations for sale. Some commerical laundries and other establishments in Virginia will do and guarantee flameproofing work on fabrics. If you are unable to find any in your area, it is suggested that you contact the State Fire Marshal for further information.

15. Are Approved Metal Cans with Self-Closing Covers Used for Storage of Oily Waste, Polishing Cloths, etc., in Shops or Wherever Such Materials Are Found?

Greasy and oily waste, paint rags, wiping and polishing cloths, etc., are subject to spontaneous ignition. They should be kept in tightly covered metal cans when not in use and the cans should be of such types that spontaneous heating can occur inside the can without setting fire to its surroundings. Specially designed oily waste cans with self-closing covers and ventilated bottoms are available commercially. Most of these will bear the label of approval of Underwriters' Laboratories, Inc.

Floor sweeping compounds should be approved by Underwriters' Laboratories as having no spontaneous heating hazard. Look for the Underwriters' label on the container.

Approved Oily Waste Can



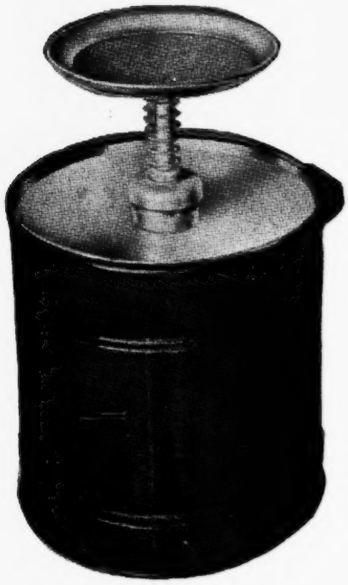
16. (a) Are Kerosene, Gasoline, and Other Flammable Liquids Stored in Approved Metal Containers?

Approved Safety Cans

Storage Can

Wash Tank

Plunger Can



(b) Are Such Liquids Stored in a Detached Shed or in a Well-Ventilated, Fire-Resistive Room?

Metal cans should be used for storing and dispensing small quantities of flammable liquids in buildings. Glass containers involve the danger of breakage. Plastic bottles are less easily broken but will melt or burn. Underwriters' Laboratories approved safety cans have a spring to close the cover, which minimizes evaporation and the likelihood of accidental spillage. This arrangement also serves as a relief valve to prevent explosion of a can exposed in a fire. Don't overlook the use of flammable liquids in school laboratories.

Larger quantities of flammable liquids such as drums of flammable solvents should be eliminated if possible; but if they are necessary, they should preferably be stored in a detached shed used exclusively for that purpose. If it is necessary that they be stored in the school building, a well-ventilated, fire-resistive room with self-closing, fire-resistive door should be provided for that purpose. The room should be kept locked and *No Smoking* signs posted. Pumps are the best means of withdrawing a flammable liquid from tanks or drums because the flow can be controlled. However, if faucets are used on drums for gravity flow, they should be of the spring-closing type which will flow only while held open manually.

17. Are Accumulations of Grease Removed Regularly from Kitchen Exhaust Ducts, Fans and Filters?

Hood and exhaust vent ducts over cooking ranges are a possible fire hazard because of the accumulation of grease in the interior of the duct and the possible ignition of grease deposits due to excessive heat from the stove or ignition of cooking fats or oils on the stove. There should be sufficient clearance between the ducts and combustible material to prevent the ignition of the combustible material in case of a burn out of the duct. They should never be run through attics, lofts or concealed spaces where there is combustible construction or contents.

Grease filters located in the hood are satisfactory provided they are regularly removed for cleaning or replacement. Clean-out doors should be provided for the ducts and a regular program of cleaning is essential.

Where fan blades are found coated with grease, this is an indication that the ducts also need cleaning. Where filters are used and grease is found on the fans, this indicates that the filters are not properly sealed in their frames or that there is a leak in the duct system. Portable carbon dioxide or dry chemical extinguishers can be used on duct fires so it would be desirable to have one or more of these handy.

18. Has the Electrical Wiring Been Inspected and Approved by a Qualified Person within the Last 12 Months?

The adequacy and condition of an electrical system should be passed on by an expert. However, there are certain obvious defects with which the inspector can familiarize himself, bearing in mind that electrical fires are principally due to arcs and to overheating. Among these are:

(a) Service equipment dirty

(b) Wires bare or insulation badly deteriorated

(c) Wires not properly separated from metal pipes

(d) Covers missing from junction boxes, cabinets, switches and outlet boxes

(e) Conduit or raceway in deteriorated condition or not securely fastened in place or not securely fastened to outlet boxes and cabinets

(f) Wiring joints not properly made or taped

(g) Wiring too close to sources of excessive heat

(h) Electrical motors dirty or dust covered

(i) Switches not enclosed in metal cabinets or boxes

(j) Switchboards and panelboards not protected against moisture

(k) Electrical fixtures and appliances dirty, poorly maintained or subject to moisture

(l) Sockets defective

19. Are Only Approved Electrical Extension Cords Used?

One of the leading causes of electrical fires is the use of defective extension cords. Such cords should be labeled by Underwriters' Laboratories, Inc. They should be used only when a flexible connection is necessary. They should never be used for fixed wiring, should never be spliced, never tacked, stapled or fastened to woodwork or walls, or tied to or draped over pipes or other supports. Worn or frayed cords should be replaced. When long cords are in use, it is often a sign that additional outlets and possibly a revised service are needed.

20. Are Electrical Fuses of the Proper Size for the Circuits They Protect?

Dangerous heat is generated in a conductor when current is carried in excess of its rated capacity. Overloading deteriorates insultation and may ignite nearby combustible materials. Assuming that the wiring system has been properly designed, the inspector should determine that fuses of the proper size are being used or that circuit breakers of the proper rating have been installed. An excessively hot cover to a fuse or breaker box may be a tip that the wiring is overloaded.

21. Have Portable Fire Extinguishers Received Proper Maintenance During the Last Year?

Fire extinguishers should not be used by students or teachers whose first duties in case of fire are to sound the alarm and evacuate the building. However, if properly trained to do so, custodial personnel may put fire extinguishers to good use. Complete details on fire extinguisher selection, use, location, operation and maintenance may be obtained by writing to the National Board of Fire Underwriters, 85 John Street, New York 38, for a copy of their Standard No. 10, "Portable Fire Extinguishers" which may be obtained free of charge. Your local fire department will usually have information on sources from which approved extinguishers may be purchased. A brief description of the operation and maintenance of the more common extinguisher types follows:

Soda-Acid

Water solution type. Expelled by reaction of sulfuric acid and sodium bicarbonate solution. To operate, invert. Annually discharge, refill and tag

Pump Tank

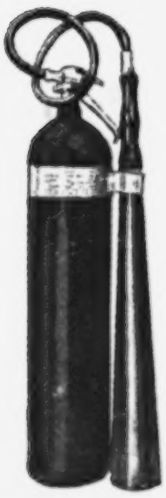
Water, or calcium chloride water solution expelled by pump. Annually, partly discharge, inspect, oil pump shaft, refill and tag

Plain Water

Plain water expelled by stored air pressure. To operate, squeeze grip. Periodically see unit is full. Semi-annually, read pressure on gauge and tag

Vaporizing Liquid

Solution is carbon tetrachloride or chlorobromomethane base. Expelled by pump, by stored air or carbon dioxide pressure. Annually, partly discharge, inspect, refill and tag



Carbon Dioxide

Carbon dioxide gas under pressure in cylinder expelled by opening valve. Annually, check weight and tag

Dry Chemical

Contents are treated sodium bicarbonate with components to produce free flow of the powder and give it water repellency. Expelled by pressure from carbon dioxide cartridge. Annually, check weight of cartridge, free flow of powder, and tag

Foam

Water solution type. Foam is produced from reaction of solution of aluminum sulfate in an inner container and solution of sodium bicarbonate and a foam stabilizing agent in the outer container. To operate, invert. Annually, discharge, refill and tag

22. If the Building Has a Standpipe, Is the Hose in Good Condition?

The usual standpipe hose is of unlined yarn which leaks during the first few minutes of use, but is less bulky and will last well under the conditions usually found in buildings. Unlike rubber hose, it does not deteriorate when dry or kept in a heated room. Unlined hose is designed to be kept normally dry, and, unfortunately, if subject to moisture it will deteriorate. This makes it important that the hose valve be provided with suitable open or automatic drip connection to carry off any slight leakage. If a leaky valve is found, it should be replaced and the damp section of hose should also be replaced.

23. Are School Grounds and Parking Arranged So As to Provide Ready Access by Fire Fighting Equipment?

Fences, parking arrangements and entrances to some school

grounds have been laid out without proper thought to access by fire fighting equipment. If these conditions are discovered, a conference should be held with the school authorities to make sure that necessary corrections are made.

24. Are Positive Measures Taken by the School Authorities to Prevent Hazardous Practices at After-School Events Such as Athletic Contests, Carnivals, Theatrical Events and Community Meetings?

(Among the most common hazardous practices are locking or blocking the exit doors, using nonflameproofed crepe paper and other highly combustible decorations, and use of makeshift and dangerous electrical wiring.)

In considering this question, the inspector should make inquiry as to what steps the school authorities are actually taking to prevent such hazardous practices. Many departments find it advisable to make an occasional spot check before and during such events. Some of the worst loss of life in school fires has occurred at after-school activities.

APPENDIX A

Origin of the Program

Following the tragic school fire in Chicago which occurred on December 1, 1958, the entire nation became aroused to the necessity for renewed efforts in fire prevention programs. Two major questions were raised by many people: How can a school be made safe against fire and, if fire should strike, how can the occupants be assured of a safe escape?

Sensing a deep concern, Governor J. Lindsay Almond, Jr., invited a small group of State officials to confer with him regarding the activities and practices in Virginia that are directed toward the fire-safety of our school children. It was revealed that regulations for new school construction are effective but that our vulnerability may lie in the ineffectiveness of fire prevention programs from the standpoint of periodic school inspections.

Pursuant to this conference the following persons met on January 8, 1959, in the Governor's Office:

MR. T. NELSON PARKER.....*Commissioner of Insurance*
MR. C. S. MULLEN, JR.....*State Fire Marshal*
DR. DAVIS Y. PASCHALL....*Superintendent of Public Instruction*
MR. T. ANTHONY POLLARD.*President, Virginia School Boards Association*
MR. H. A. DUGAN.....*President, Virginia State Firemen's Association*
MR. WALLACE HICKS.....*Secretary, Virginia State Firemen's Association*
MR. L. M. BOWMAN.....*President, State Fire Chief's Association*
MR. HAROLD BAUMES.....*Secretary, State Fire Chief's Association*
MR. H. K. CASSELL.....*President, Virginia Association of School Administrators and Superintendent of Augusta County Schools*
MR. JOHN D. MEADE.....*Superintendent of Petersburg City Schools*

MR. R. L. LACY . . . . . *Superintendent of Halifax County Schools*

DR. R. CLAUDE GRAHAM . . . *Assistant Superintendent of Public Instruction*

MR. GORDON H. FALLESEN . *Assistant Supervisor, Trade and Industrial Education, State Department of Education*

After considerable discussion, the group agreed that a School Fire Prevention Inspection Program involving local school authorities and local fire department personnel should be inaugurated on a *voluntary* basis. Thus, the Virginia School Fire Prevention Inspection Program came into existence.

Following the meeting of January 8, 1959 a tentative fire inspection form was devised with two purposes in mind:

1. To serve as a basis for a "trial effort" in order to get an early inspection underway, and
2. To serve as a means by which division superintendents and heads of local fire departments could offer their reactions or suggestions for improvement preliminary to its revision for future inspections.

During the school year 1958-59, copies of the tentative fire inspection form were simultaneously distributed to division superintendents of schools and local fire departments for immediate use. At the close of that school year, division superintendents and local fire department personnel were surveyed to determine the effectiveness of the inspection form and program. Survey results were compiled and studied by the project Steering Committee and ultimately by the State Committee after which, the inspection form was revised and the program described herein formulated.

APPENDIX B

Commonwealth of Virginia

STATE BOARD OF EDUCATION AND STATE FIRE MARSHAL DIVISION, BUREAU OF INSURANCE, STATE CORPORATION COMMISSION

SCHOOL FIRE PREVENTION INSPECTION FORM

School Division_____

Name of School_____

School Address_____

1. (a) Are the main exit doors from schools of over 4 classrooms, including doors to fire escapes, equipped with locks or latches which are operated by panic bars?..... _____

   (b) Are these devices in good working condition?.... _____

2. (a) Are outside fire escapes, where they exist, free from obstructions?..... _____

   (b) Are they used during fire drills?..... _____

3. (a) Are there at least two exits from each floor of multistory buildings?..... _____

   (b) Are they in good repair?..... _____

4. Are main exits in schools of over 4 classrooms marked with exit signs?..... _____

5. Do the exit doors open outward?..... _____

6. Are the corridors leading to the exits clear and unobstructed?..... _____

7. Are fire exit drills held at least once each week during the first month of school and at least once each month thereafter? . . . . . _____

(Inspectors should witness a drill)

Time required to evacuate school_____

School enrollment_____

8. Are provisions for sounding a fire alarm throughout the school adequate? . . . . . _____

9. Has the heating equipment been inspected and approved by a qualified person within the last 12 months? . . . . . _____

10. Are ashes placed in metal containers used for that purpose only? . . . . . _____

11. Is the furnace room provided with a fixed louver or other opening, permanently open to the outdoors, to supply combustion air? . . . . . _____

12. Are the following locations free from any *unnecessary* accumulations of waste paper, rubbish, old furniture, stage scenery and other combustible materials? . . . . . _____

Attic_____ Basement_____ Furnace room_____

Stage_____ Under Stage_____ Storage rooms_____

Other locations (specify)_____

13. Is the space beneath stairs free from any storage? . . . . . _____

14. Are decorations, curtains and scenery in the auditorium, cafeteria or other places of assembly flameproof? . . . . . _____

15. Are approved metal cans with self-closing covers used for storage of oily waste, polishing cloths, etc., in shops or wherever such materials are found? . . . . . _____

16. (a) Are kerosene, gasoline, and other flammable liquids stored in approved metal containers? . . . . . _____

(b) Are such liquids stored in a detached shed or in a well-ventilated fire-resistive room? . . . . . _____

17. Are accumulations of grease removed regularly from kitchen exhaust ducts, fans and filters? . . . . . _____

18. Has the electrical wiring been inspected and approved by a qualified person within the last 12 months? . . . . . _____

19. Are only approved electrical extension cords used? . . . . _____

20. Are electrical fuses of the proper size for the circuits they protect? . . . . . _____

21. Have portable fire extinguishers received proper maintenance during the last year? . . . . . _____

22. If the building has a standpipe is the hose in good condition? . . . . . _____

23. Are school grounds and parking arranged so as to provide ready access by fire fighting equipment? . . . . . _____

24. Are positive measures taken by the school authorities to prevent hazardous practices at after-school events such as athletic contests, carnivals, theatrical events and community meetings? . . . . . _____

    (Among the most common hazardous practices are locking or blocking the exit doors, using nonflameproofed crepe paper and other highly combustible decorations and use of makeshift and dangerous electrical wiring.)

Signed_____ Title_____
(School Representative)

Signed_____ Title_____
(Fire Department Representative)

Fire Department_____

Address_____

Date of Inspection_____

Remarks:

Revised 1-5-60

APPENDIX C

Fire Exit Drills in Schools

The following recommendations are extracted from Section 51 of the Building Exits Code published by the National Fire Protection Association. These recommendations are, of necessity, general in form because each school is different. Thus, these suggestions will have to be adapted to the individual building. More complete information on fire exit drills may be found in the bibliography, Appendix E.

Emphasis should be placed on sounding the alarm and getting the children out of the building in case of fire. Any fire fighting should be left to custodial personnel pending the arrival of the fire department. If physically handicapped children are present, provision should be made for able-bodied students to assist in their evacuation. Drills should occasionally be conducted with one or more exits blocked so as to simulate actual fire possibilities.

A reporting system should be used at all fire exit drills so that the principal will be able to report the building all clear when the fire department arrives.

5112. Drills shall be executed at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or physical education periods, etc., so as to avoid distinction between drills and actual fires. If a drill is called when pupils are going up and down the stairways, as during the time classes are changing, the pupils shall be instructed to form in file and immediately proceed to the nearest available exit in an orderly manner.

Instructions should be conspicuously posted describing the procedure of the drills.

5113. Every fire exit drill shall be an exercise in school management for principal and teachers, with the chief purpose of every drill complete control of the class so that the teacher will form its ranks quickly and silently, may halt it, turn it or direct it as desired. Great stress shall be laid upon the execution of each drill in a brisk, quiet and orderly manner. Running shall be prohibited. In case there are pupils incapable of holding their places in a line moving at a reason-

able speed, provisions shall be made to have them taken care of by the more sturdy pupils, moving independently of the regular line of march.

If, for any reason, a line becomes blocked, some of the pupils should be countermarched to another exit in order to prevent panic conditions arising as a result of inactivity.

5114. Monitors shall be appointed from the more mature pupils to assist in the proper execution of all drills. They shall be instructed to hold open doors in the line of march or to close doors where necessary to prevent spread of fire or smoke. There shall be at least two substitutes for each appointment so as to provide for proper performance in case of absence of the regular monitors. The searching of toilet or other rooms shall be the duty of the teachers or other members of the staff. If the teachers are to do the searching, it should be done after they have joined their classes to the preceding lines.

5115. As all drills simulate an actual fire condition pupils shall not be allowed to obtain clothing, after the alarm is sounded, even when in home rooms, on account of the confusion which would result in forming the lines and the danger of tripping over dragging apparel.

5116. Each class or group shall proceed to a predetermined point outside the building and remain there while a check is made to see that all are accounted for, leaving only when a recall signal is given to return to the building, or when dismissed. Such points shall be sufficiently far away from the building and from each other as to avoid danger from any fire in the building, any interference with fire department operations, or any confusion between different classes or groups.

5117. When necessary for drill lines to cross roadways, signs reading "STOP! SCHOOL FIRE DRILL," or equivalent, shall be carried by monitors to the traffic intersecting points in order to stop traffic during the period of the drill.

Wherever possible, drill lines should not cross a street or highway, especially where the traffic is heavy. It is recommended that where drill lines must cross roadways, a police officer, school janitor, or a male teacher acting as a traffic officer to be on duty to control traffic during drills.

5118. (a) All fire exit drill alarms shall be sounded on the fire alarm system.

(b) Whenever any of the school authorities determine that an actual fire exists, they shall immediately call the local fire department using the public fire alarm system or such other facilities as are available.

(c) In order that pupils will not be returned to a building which is burning, the recall signal shall be one that is separate and distinct from and cannot be mistaken for any other signals. Such signals may be given by distinctive colored flags or banners. If the recall signal is electrical, the push buttons or other controls shall be kept under lock, the key for which shall be in the possession of the principal or some other designated person in order to prevent a recall at a time when there is a fire. Regardless of the method of recall, the means of giving the signal shall be kept under a lock.

APPENDIX D

The State Fire Marshal and School Fire Safety

The State Fire Marshal, who has a small staff, is required to enforce the Virginia Fire Safety Regulations in public schools. These regulations do not deal with fire prevention, housekeeping and fire drills, as indicated on the fire inspection form. Instead, the State Regulations deal chiefly with structural matters such as provisions of automatic protection, interior finish, design and construction of exitways, protection of duct systems, etc.

However, if the local fire department and school fire officials have questions on any point involved in the voluntary fire inspections, it would be entirely in order to call on the nearest Deputy State Fire Marshal for such assistance as he might render. The addresses of the district offices are given below:

Northern—308 Colonial Building, 515 Wythe Street, Alexandria

Central—809 Blanton Building, Richmond

Eastern—5822 Chesapeake Boulevard, Norfolk

Western—209 Coulter Building, 609 South Jefferson Street, Roanoke

Southwestern—217 Lincoln Center Building, Marion

APPENDIX E

Bibliography

PUBLICATIONS

School Fire Drills— Pamphlet No. 103, United States Department of Health, Education and Welfare, Office of Education, United States Government Printing Office, Washington 25, D. C. (price .15)

School Fire Safety— United States Department of Health, Education and Welfare, Office of Education, United States Government Printing Office, Washington 25, D. C. (price .25)

Fire Safety Schools— National Board of Fire Underwriters, Committee on Engineering, 85, John Street, New York 38, New York (free)

The Chicago School Fire— National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts (price .25)

Inspection Manual— National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts (price $4.00)

HELP FROM NATIONAL ORGANIZATIONS

Information and help on fire safety problems may frequently be obtained from national organizations such as: The National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts, and the National Board of Fire Underwriters, 85 John Street, New York 38, New York. The NFPA publishes a great deal of fire safety literature for which it makes a nominal charge. The National Board of Fire Underwriters also publishes a great deal of fire protection literature, most of which may be obtained free of charge. The National Board also maintains a film library from which fire departments may order fire prevention and fire fighting films free of charge. Both organizations will be happy to send lists of their publications and films upon request.

Many valuable, yet inexpensive, publications on school fire safety may also be obtained from the National Commission on Safety Education, National Education Association, 1201 Sixteenth Street, N. W., Washington 6, D. C. Upon request, a list of Commission publications and materials on safety may be obtained without cost.